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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/067,965	02/08/2002	Bryan J. Donoghue	922-152	7935

7590 11/23/2005

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EXAMINER	
PHAN, MAN U	
ART UNIT	**PAPER NUMBER**
2665	

DATE MAILED: 11/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.	Applicant(s)	
	10/067,965	DONOGHUE ET AL.	
	Examiner	Art Unit	
	Man Phan	2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 February 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9 and 11* is/are rejected.

7)☒ Claim(s) *10 and 12* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 February 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *8/20/02, 5/5/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The application of Donoghue et al. for the "cascade control system for networks units" filed 02/08/2002 has been examined. This application claims Foreign Priority based on the application 0130815.4 filed December 22, 2001 in United Kingdom. Receipt is acknowledged of papers submitted under 35 U.S.C 119(a) – (d), which papers have been placed of record in the file. Claims 1-12 are pending in the application.

Claim Objections

2. Claims 2, 3 and 5-7 recite the limitation "A stackable network unit" in lines 1. This should be "The stackable network unit", because it is preceded by the same limitation in line 1 of claim 1.

Claims 9-10 recite the limitation "A control device" in lines 1. This should be "The control device", because it is preceded by the same limitation in line 1 of claim 8.

Claim 12 recite the limitation "A stack" in line 1. This should be "The stack", because it is preceded by the same limitation in line 1 of claim 11.

3. Claims 3, 4 are objected to because of the following informalities: "responsive to control data from said messages" (claim 3, line 2 and claim 4, line 11) should change to –responsive to a control data from said control messages—for the consistency and of art rejection.

Claim 6, line 2 and claim 12, line 2: "from said messages" should change to –from said control messages--. Appropriate correction is required.

Claim Rejections - 35 USC # 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 1 12:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 3 are rejected under 35 U.S.C. 1 12, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. Claim 2 recites the limitations "the control data" in line 1. There is no antecedent basis for this limitation in the claim.

b. Claim 10 recites the limitations "the third set of storage registers" in line 8, and "the first set of storage registers" in line 9. There is no antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC ' 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dolphin et al. (US#6,807,182) in view of Byham et al. (US#6,594,231).

With respect to claims 1 and 4, 7, Dolphin et al. (US#6,807,182) and Byham et al. (US#6,594,231) disclose a novel system and method for stackable hub units which can be stacked or connected so that the units form a single logical entity, according to the essential features of the claims. Dolphin discloses in Fig. 1 a block diagram illustrated a stackable network unit comprising a multiplicity of ports, of which for convenience five ports, numbers 2, 3, 4, 5 and 6 have been illustrated. As will be apparent from Fig. 2, ports 4 and 5 are two physical ports which form part of a trunked connection to a remote switch. Port 6 is a port which is connected by way of a cascade connection to other switches in a stack of switches organised so that the stack effectively forms a single logical unit having as a multiplicity of ports the aggregate of the ports on the devices 1, 21 and 31 (Fig. 2). The switch 1 includes a bus 7, which may convey both packets and status information. Coupled to the bus 7 is a processor (CPU) 8, memory 9, and a switching ASIC 10. Each of the ports 2 to 6 has associated

with it a respective port ASIC 2a to 6a respectively. These ASICs each comprise a physical layer device (PHY) which, among other things, converts signals from the format in which they are transmitted between unit 1 and other units into a conventional media independent format and a media access controller (MAC) which performs certain basic operations on the header portion of a packet to ensure that the packet is sent to the appropriate physical location (Col. 3, lines 59 plus). Dolphin further teaches a protocol engine, in which protocol data from any of the physical ports anywhere in the stack is made to appear to have come from the logical protocol port by forwarding the protocol messages to the unit hosting the logical protocol port. The forwarding mechanism looks at the incoming port number, destination MAC address, the protocol type, and optionally the data within the packet and determines if the packet should be forwarded. If the packet should be forwarded it is sent across the cascade to the unit that has the protocol engine for the trunk port on the same VLAN and with the same trunk ID as the incoming packet. The forwarded packet is the same as the received packet except that it is sent to the unit hosting the protocol engine across the cascade (See Fig. 3, Col. 3, line 28 to Col. 4, line 42).

However, Dolphin does not disclose expressly wherein the unit is responsive to the absence of control messages from one or other of the control links to redirect control data intended for that control link to the other control link. In the same field of endeavor, Byham et al. (US#6,594,231) teaches in Fig. 3 a detailed diagrams illustrated the layout of the stackable unit, inludes a link detector for detecting tile absence of another operative unit connected to the down port to cause data packets on the return pat to bypass the down port and proceed on the arbitration path and for detecting the absence of another operative unit connected to the up port

to cause data packets on the arbitration path to bypass the up port and proceed on the repeat path (Col. 7, lines 50 plus).

Regarding claims 2, 3, 6, in addition to features recited in base claim 1 (see rationales disclosed above), Byham also discloses wherein the control data identifies which units are active in the stack, and controlling the forwarding of data packets from the cascade port (See Fig. 3; Col. 4, lines 20-59 and Col. 5, lines 61-65, Col. 6, lines 56-62).

Regarding claim 5, in addition to features recited in base claim 4 (see rationales disclosed above), Byham further discloses wherein the control logic is response to the absence of control messages from an adjacent unit to loop back control data intended for that unit (See Fig. 4; Col. 7, lines 60 plus).

One skilled in the art would have recognized the need for facilitating the cascade control logic for use in a cascaded stack, and would have applied Byham's teaching of the control logic in stackable hub units into Dolphin's novel use of the protocol engines and cascade control architecture for packet-based communication systems. Therefore, It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to apply Byham's method and apparatus for configuration of stackable units in packet-based communications systems into Dolphin's stacked network devices including a protocol engine and distributed trunk ports and method of operating same with the motivation being to provide a method and system for cascade control system for network units.

9. Claims 8-9, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dolphin et al. (US#6,807,182) in view of Byham et al. (US#6,594,231).

With respect to claims 8 and 11, Dolphin et al. (US#6,807,182) and Byham et al. (US#6,594,231) disclose a novel system and method for stackable hub units which can be stacked or connected so that the units form a single logical entity, according to the essential features of the claims. Dolphin discloses in Fig. 1 a block diagram illustrated a stackable network unit comprising a multiplicity of ports, of which for convenience five ports, numbers 2, 3, 4, 5 and 6 have been illustrated. As will be apparent from Fig. 2, ports 4 and 5 are two physical ports which form part of a trunked connection to a remote switch. Port 6 is a port which is connected by way of a cascade connection to other switches in a stack of switches organised so that the stack effectively forms a single logical unit having as a multiplicity of ports the aggregate of the ports on the devices 1, 21 and 31 (Fig. 2). The switch 1 includes a bus 7, which may convey both packets and status information. Coupled to the bus 7 is a processor (CPU) 8, memory 9, and a switching ASIC 10. Each of the ports 2 to 6 has associated with it a respective port ASIC 2a to 6a respectively. These ASICs each comprise a physical layer device (PHY) which, among other things, converts signals from the format in which they are transmitted between unit 1 and other units into a conventional media independent format and a media access controller (MAC) which performs certain basic operations on the header portion of a packet to ensure that the packet is sent to the appropriate physical location (Col. 3, lines 59 plus). Dolphin further teaches a protocol engine, in which protocol data from any of the physical ports anywhere in the stack is made to appear to have come from the logical protocol port by forwarding the protocol messages to the unit hosting the logical protocol port. The forwarding mechanism looks at the incoming port number, destination MAC address, the protocol type, and optionally the data within the packet and determines if the packet should be

forwarded. If the packet should be forwarded it is sent across the cascade to the unit that has the protocol engine for the trunk port on the same VLAN and with the same trunk ID as the incoming packet. The forwarded packet is the same as the received packet except that it is sent to the unit hosting the protocol engine across the cascade (See Fig. 3, Col. 3, line 28 to Col. 4, line 42).

However, Dolphin does not disclose expressly wherein the unit is responsive to the absence of control messages from one or other of the control links to redirect control data intended for that control link to the other control link. In the same field of endeavor, Byham et al. (US#6,594,231) teaches in Fig. 3 a detailed diagrams illustrated the layout of the stackable unit, inludes a link detector for detecting tile absence of another operative unit connected to the down port to cause data packets on the return pat to bypass the down port and proceed on the arbitration path and for detecting the absence of another operative unit connected to the up port to cause data packets on the arbitration path to bypass the up port and proceed on the repeat path (Col. 7, lines 50 plus).

Regarding claim 9, in addition to features recited in base claim 8 (see rationales disclosed above), Byham also discloses wherein controlling the forwarding of data packets from the cascade port (See Fig. 3; Col. 5, lines 61-65, Col. 6, lines 56-62). Byham further discloses the loop back of data intended for the first port extends from the first storage means to the second storage means and the loop back of data intended for the second port extends from the second storage means to the first storage means (See Figs. 1, 4; Col. 3, lines 2 plus and Col. 5, lines 10 plus).

One skilled in the art would have recognized the need for facilitating the cascade control logic for use in a cascaded stack, and would have applied Byham's teaching of the control logic in stackable hub units into Dolphin's novel use of the protocol engines and cascade control architecture for packet-based communication systems. Therefore, It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to apply Byham's method and apparatus for configuration of stackable units in packet-based communications systems into Dolphin's stacked network devices including a protocol engine and distributed trunk ports and method of operating same with the motivation being to provide a method and system for cascade control system for network units.

Allowable Subject Matter

10. Claims 10 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for the indication of allowable subject matter: The closest prior art of record fails to disclose or suggest wherein the first storage means comprises a first set of registers for data from control frames received at the second port and a second set of registers for providing data for control frames forwarded from the first port; the second storage means comprises a third set of registers for data received from control frames at the first port; and wherein the second set of registers and the first port are selectively coupled to the third set of storage registers and the third set of storage registers and the second port are selectively coupled to the first set of storage registers; wherein each network unit has at least two

cascade ports and each units is responsive to control data from the control messages to control the switching engine to redirect data packets otherwise intended for each cascade port of the network unit to a different cascade port of the same network unit, as specifically recited in the claims.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The Donoghue et al. (US#2003/0118021) is cited to show the cascade system for network units.

The gavin et al. (US#6,684,258) is cited to show the stackable ring network including burst transmission of data packet.

The Poulter et al. (US#2002/0057683) is cited to show the cascade control architecture and operation for packet based communication systems.

The Jennings et al. (US#6,463,479) is cited to show the apparatus for trunking in stacked communication devices.

The O'Keeffe et al. (US#6,801,527) is cited to show the stackable network unit including registers for identifying stack members and trunk ports.

The Jennings et al. (US#6,801,953) is cited to show the trunking in stacked communication devices.

The O'Keeffe et al. (US#6,801,950) is cited to show the stackable network unit including register for identifying trunk connection status of stacked units.

The O'Keeffe et al. (US#6,785,286) is cited to show the port mirroring across a trunked stack of multi port communication devices.

The Chen (US#6,373,840) is cited to show the stackable network device and method having a switch control circuit.

The Pearce et al. (US#5,651,003) is cited to show the stackable cell switch architecture.

The Van Wageningen et al. (US#2002/0080795) is cited to show the packet switching arrangement comprising a cascade control and bufferless cascade switching matrix.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Phan whose telephone number is (571) 272-3149. The examiner can normally be reached on Mon - Fri from 6:00 to 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu, can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

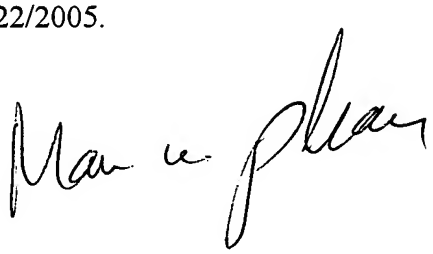
Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2600.

13. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have any questions on access to

the Private PAIR system, contact the Electronic Business Center (EBC) at toll free 1-866-217-9197.

Mphan

11/22/2005.



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